WHAT IS CLAIMED IS:

1   1.   A method for generating and displaying a channel map for a network, the method

2   comprising the steps of:

3   retrieving channel data for a plurality of nodes in the network;

4   generating a graphical image of the channel map representing a first node and a second

5   node of the plurality of nodes in the network from the retrieved channel data, the

6   graphical image showing a relationship of a channel in the first node to a channel

7   in the second node; and

8   displaying the graphical image of the channel map.

1   2.   The method of claim 1, further comprising the steps of:

2   determining nodes in the network; and

3   wherein the step of retrieving channel map data is performed for each node determined to

4   be in the network.

1   3.   The method of claim 1, further comprising the steps of:

2   receiving an input requesting information about a channel;

3   generating a second image of requested information; and

4   displaying the second image with the generated image.

1   4.   The method of claim 3, wherein the step of generating comprises creation of a list

2   of channel data; and the step of displaying includes creating a window over the graphical image

3   of the channel map and showing the list in the window.

1   5.   The method of claim 4, wherein the list of channel data includes band, channel,

2   side, circuit pack type, role and access type.

1   6.   The method of claim 3, wherein the step of generating includes producing a pop-

2   up menu of supported operations including one from the group of get additional information,

3   generate reports or transition to other channel map images.

1   7.   The method of claim 1, further comprising the step of storing retrieved channel

2   data for the plurality of nodes in storage at the element management system.

1   8.   The method of claim 1, further comprising the steps of:

2   receiving an input requesting a report;

3   generating an image of the channel map in HTML format; and

4   opening a browser window and displaying the generated image in the window.

1   9.   The method of claim 1, further comprising the steps of:

2   receiving an input requesting a report;

3   generating an image of the channel map in a printer file; and

4   sending the printer file to a printer.

1   10.   The method of claim 1, further comprising the steps of:

2   receiving an input requesting an export of a channel map;

3   creating a file with the channel map data; and

4   storing the created file.

1   11.   The method of claim 1, wherein the step of retrieving channel data includes the

2   steps of:

3   retrieving optical band channel assignments;

4   retrieving sub-rate information;

5   retrieving data on provisioned circuits; and

6   retrieving data on sub rate circuits.

1   12.   The method of claim 1, further comprising the step of updating the channel map

2   data and displaying an updated version of the channel map.

1   13.   The method of claim 12, wherein the step of updating the channel map data and

2   displaying an updated version of the channel map is responsive to one from the group of: user

3   input, passage of time or an event being sent from an administrative complex of a node to the

4   element management system.

1   14.   The method of claim 1, wherein the graphical image of the channel map is a

2   window having a first, second and third columns, the first column provides labels for the bands

3   and channels on a first direction to/from the first node, the third column provides labels for the

4   bands and channels on a second direction to/from the second node, and the second column is

5   positioned between the first and third columns and depicts channel and band allocation

6   information.

1   15.   The method of claim 14, wherein the second column has a plurality of cells with

2   left and right portions for displaying west and east side information for the node and lines in the

3   cells correspond to connections made by the node, and wherein rows in the first and third

4   columns are labeled with a unique channel identifier that includes a row and channel designation.

1   16.   The method of claim 15, wherein the rows are grouped in bands and each band is

2   marked by visually distinct delineation.

1   17.   The method of claim 15, wherein the graphical image of the channel map further

2   comprises a legend positioned proximate the first, second and third columns in a split pane, the

3   legend displays icons that may be placed in the cells of the second column and associated text

4   descriptions.

1   18.   The method of claim 15, wherein the graphical image of the channel map further

2   comprises a legend positioned proximate the first, second and third columns in a split pane, the

3   legend displays icons that may be placed in the cells of the second column and associated text

4   descriptions.

1   19.   The method of claim 15, wherein the icons in the legend include one from the

2   group of:

3   icons indicating whether the node is performing an add/drop function and whether a

4   multiplexer exists;

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5   icons indicating administrative state;

6   icons representing alarm states;

7   icons representing regeneration or pass through by a node; and

8   icons representing error conditions.

1   20.   The method of claim 15, wherein lines in the cells are used to represent circuits,

2   and line with a first visual format represents a non-provisioned circuit, and a line with a second

3   visual format represents a provisioned circuit.

1   21.   The method of claim 20, wherein a color of a lines is used to indicate the status of

2   the circuit, and wherein the line is colored a first color to indicate a critical problem, a second

3   color to indicate a major problem, a third color to indicate a minor problem, and a fourth color to

4   indicate no alarm conditions.

1   22.   The method of claim 1, wherein the graphical image of the channel map is a

2   window having a first column, a second column, and a plurality of additional columns, the first

3   column providing labels for the bands and channels on a first direction to/from a node, the

4   second column provides labels for the bands and channels on a second direction to/from a second

5   node, and the plurality of additional columns is positioned between the first and second columns

6   and depicts channel and band allocation information.

1   23.   The method of claim 22, wherein each of the additional columns has a plurality of

2   cells with left and right portions for displaying west and east side information for the node and

3   lines in the cells correspond to connections made by the node, and wherein rows in the first and

4   second columns are labeled with a unique channel identifier that includes a row and channel

5   designation.

1   24.   An apparatus for generating and displaying a channel map for a network having a

2   plurality of nodes, the apparatus comprising:

3   a channel map display module for retrieving data for the channel map, for storing the data

4   for the channel map, and for generating a channel map user interface, the channel

5   map display module coupled to the plurality of nodes;

6   template storage for storing a user interface template that is combined with data by the

7   channel map display module to generate the channel map user interface, the

8   template storage coupled to the channel map display module; and

9   band storage for storing band and channel assignment data used for circuits in the

10   network, the band and channel assignment data retrieved from the plurality of

11   nodes, the band storage coupled to the channel map display module.

1   25.   The apparatus of claim 24, wherein the template storage holds a plurality of

2   different templates for displaying different aspects of the channel map including one from the

3   group of a template for showing a channel map of connections between two nodes, a template for

4   showing all the bands and circuits in an entire sub-network, and a template for circuit

5   provisioning information and subrate circuit information.

1   26.   The apparatus of claim 24, wherein the band storage stores information about

2   aspects of the circuit packs including one from the group of: whether regeneration is performed,

3   type of regeneration, whether channels are passed through, and whether bands are passed

4   through.

1   27.   The apparatus of claim 24, further comprising subrate information storage, the

2   subrate information storage coupled to the channel map display module, the subrate information

3   storage storing data retrieved from the nodes.

1   28.   The apparatus of claim 27, wherein the subrate information storage holds subrate

2   circuit pack connections including identifying a multiplexer connection to the circuit pack.

1   29.   The apparatus of claim 24, further comprising provisioned circuit storage, the

2   provisioned circuit storage coupled to the channel map display module, the provisioned circuit

3   storage storing data retrieved from the nodes regarding provisioned circuits.

1   30.   The apparatus of claim 29, wherein the channel map display module depicts

2   circuit connection in the channel map with different visual characteristics using provisioned

3   circuit date from the provisioned circuit storage.

1   31.   The apparatus of claim 24, wherein the channel map display module retrieves an

2   outstanding alarm condition from a node on an end point of a circuit and correlates it to the

3   circuits.

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1   32.   The apparatus of claim 24, further comprising subrate circuit storage for storing

2   details on subrate circuits that are provisioned in the network from the nodes, the subrate circuit

3   storage is coupled to the channel map display module.

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